Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications	)	PS Docket No. 11-153
	)	
Framework for Next Generation Deployment	)	PS Docket No. 10-255

COMMENTS OF INTRADO INC.

Intrado Inc. (Intrado) respectfully submits its comments in response to Section III B., Comprehensive Text-to-911 Proposals, of the Federal Communications Commission's (FCC or Commission) Further Notice of Proposed Rulemaking (FNPRM) in the above proceeding.[1]

I. INTRODUCTION

The December voluntary agreements of the four major wireless carriers were very positive steps in the ongoing deployment of text-to-911 capability. Intrado supports a unified carrier approach to address such a life-impacting technology gap. Text-to-911 provides critical access to 911 for the nation's hearing and speech disabled citizens and offers everyone the ability to reach emergency assistance when a voice call is not a safe option. As the first 911 technology vendor to deliver a text-to-911 solution, Intrado appreciates that the wireless carriers are voluntarily advancing this capability, and it will continue to collaborate with carriers, public safety agencies and industry standards groups to develop the most comprehensive text-to-911 solutions as possible. Intrado offers the following comments in response to the Commission's FNPRM.

[1] *Before the Federal Communications Commission, In the Matter of Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications and Framework for Next Generation 911 Deployment,* Further Notice of Proposed Rulemaking, PS Docket Nos. 10-255, 11-153, FCC 12-149 (Rel. December 13, 2012).

II. COMPREHENSIVE TEXT-TO-911 PROPOSALS

A. Carrier and Third Party Non-SMS-Based Text-to-911 Applications

In the FNPRM, the Commission correctly concludes that it is technically feasible for CMRS carriers to provide reliable, emergency-grade SMS text-to-911 capability to their wireless customers, that PSAPs are not overwhelmed receiving text-to-911 messages and that the benefits of text-to-911 messaging are significant.[2] The Commission's premise for considering whether non-SMS interconnected text applications should also provide text-to-911 capabilities is sound.[3] Consumers should be able to obtain emergency assistance from the devices they use to communicate. And individuals generally text from their smart phones through both SMS technology and over-the-top (OTT) applications without knowing which is being used to deliver their messages. For example, a text from an iPhone could be sent by the phone operating system as an SMS text. If a picture is added, the system would send the message as Multimedia Messaging Service (MMS). It could also be sent using Apple's OTT application, depending upon where the text is to be delivered. These options could be implemented within the same messaging interface and the user would be completely unaware of the choices unless he/she monitored the text display.

However, even as to the Commission's limited proposal to consider "the characteristics of interconnected text applications to which text-to-911 obligation should apply, if adopted," [4] consideration must be given to the technical ability of the application to access caller location. Interconnected text over-the-top applications (I-OTT) may not always be location aware. When a texting application is provided by an entity other than the network transport provider, the location of the provider is dependent upon the location acquired from an application programming interface (API). If the application provider and the provider of the operating system on the handset are different, the API can be disabled by the user or restricted by hardware platforms. Furthermore, the API relies on the best data it can acquire to provide

[2] NPRM at ¶ 48.

[4] NPRM at ¶ 92. The Commission describes interconnected text applications as those using IP-based protocols to deliver text messages to a service provider and the service provider then delivers the text messages to destinations indentified by a telephone number, using IP-based or SMS protocols.

an X/Y coordinate of the user and sometimes this data is crowdsourced, which means that it is not as trusted as location information obtained from network providers. Where the application provider and the operating system provider are the same, the location of the caller can be accessed unconditionally. Examples in the market place of these location aware OTT applications are iMessage and BlackBerry Messenger.

Location acquisition is a critical component of a reliable text-to-911 deployment because it is the information on which the text is routed to the correct PSAP for dispatch of the appropriate first responders. The Commission should carefully consider the ability of various I-OTT texting applications to obtain location when determining which are capable of implementing reliable, emergency-grade text-to-911.

B. Routing and Location Accuracy

The Commission proposes that absent a different designation by the responsible state or local 911 authority, "CMRS providers be required to route text messages automatically to the appropriate PSAP based on the cell sector to which the mobile device is connected" and that the appropriate PSAP would be "the same PSAP that would receive 911 voice calls from the same cell sector."[5] As the Commission notes, it is technically feasible to route text messages based upon cell sector information and such routing is successfully utilized today. However, because of existing delivery rules for voice calls, in some instances, the routing of a text message and the routing of a voice call from the same location could result in delivery to different PSAPs. For traditional voice calls, state or local 911 authorities may have established specific routing directions for locations within cell sectors. For example, there could be two PSAPs that have jurisdiction within a cell sector. The PSAPs may have determined that the voice call originating within a certain distance from a highway located in the cell sector should be routed to PSAP A, rather than PSAP B. Currently, these directions do not apply to the routing of text messages. Therefore, a text call may go to PSAP B while a voice call from the same location might go to PSAP A.

[5] NPRM at ¶ 118.

In light of this existing implementation difference, text-to-911 providers may not be able to comply with the proposed requirement.

C. PSAP Options for Receiving Text-to-911

Intrado appreciates the Commission's efforts to ensure that text-to-911 can be implemented on a nationwide basis even in the absence of a unified PSAP approach. There are important factors to consider when considering text-to-voice gateways and text-to-TTY translations. Moreover, it is important to consider how text messages for the remaining options will be delivered in an interoperable environment.

1. NG911-Capable PSAPs and Non-NG-Capable PSAPs (Using Web Browsers)

Intrado supports PSAPs choosing to receive text messages either through an integrated voice and text solution or using a web browser. The most important consideration is that all PSAP deployments are capable of interoperating with the technology used by providers to deliver the text messages without requiring the PSAPs to have different screens for each wireless carrier. The individual PSAPs may choose different technologies to receive text messages and many of these solutions may incorporate proprietary technologies and interfaces. Even though these PSAP solutions may be proprietary, they should support the industry standard protocol as an ingress point into their solution. This will ensure interoperability of PSAP solutions and wireless carriers or other text message providers should be required to interface only with these interoperable solutions.

2. *Text-to-Voice Gateway Centers*

In its initial comments, Intrado supported the use of text-to-voice call centers as an interim method for providing access to text-to-911 for the hearing and speech disabled communities. The proposal was intended to provide access to emergency assistance for mobile users who did not have access to IP Relay applications on smart phones, was limited to the

hearing and speech disabled users and contemplated funding from the TRS fund. The hearing and speech disabled communities generally oppose call centers as a means of providing mobile access to emergency assistance based upon their unfavorable experience with IP Relay centers and their belief that call centers do not meet ADA requirements. As to their concern about the call center experience, Intrado is convinced that, with the right staffing and operations, the call center experience can be nearly as effective as talking directly to PSAPs. However, the expense of maintaining these centers for all texters, which will apparently be borne by the wireless carriers, could outweigh the benefit.

Perhaps the best text-to-voice deployment is the scenario in which PSAPs and/or state 911 authorities choose to designate one or more text capable PSAPs in the state as text-to-voice call centers. As the Commission notes, this approach is being utilized in Iowa, where Black Hawk County accepts text messages and acts as a gateway for other PSAPs in the state. The approach minimizes the technological and operational impacts to PSAPS and at the same time avoids imposing significant costs on wireless carriers. It may also be more palatable to the hearing and speech disabled communities than a commercial call center.

If the Commission condones text-to-voice gateway centers as a PSAP option to which wireless carriers must respond, it should allow the carrier to contract with the entity of its choosing. There is no economic or legal basis for mandating a single call center option.

3. Text-to-TTY

Text messaging delivered over existing TTY infrastructure works by setting up a voice call from a TTY gateway to the PSAP and transmitting the SMS messages to and from the emergency texter using BAUDOT tones into the PSAP's existing TTY equipment. While this

option does not require PSAPs to upgrade their equipment, it does present issues that PSAPs need to be aware of if they choose this short-term, interim solution.

The speed of an SMS text to TTY call will be much slower, and will take longer than a web or integrated solution. For example, additional time will be needed to setup and establish the TTY connection. Also since TTY is transmitted at less than 5 characters a second, it could take over 30 seconds to transmit an entire SMS message to or from a PSAP.

SMS text-to-911 is message based, meaning that it delivers entire messages upon sending. In contrast, TTY is character based, meaning that the message comes across character by character. The TTY gateway will have to determine when a message is ready to be sent to a PSAP and when the PSAP has finished a message so that the gateway can send the message to the SMS texter. This could result in splitting of some messages and could add to the delay in sending and receiving messages.

The text-to-TTY gateway cannot send messages to the PSAP while the PSAP is typing, and the PSAP cannot send messages to the texter when the gateway is transmitting a message. The TTY gateway may have to queue up messages if the PSAP is still transmitting the message, thereby delaying the message further.

There is no mechanism for the PSAP or texter to ask to have messages retransmitted. Because TTY is error-prone and it is possible for collisions to occur (both sides typing at the same time), it is possible for large parts of messages or even entire messages to become corrupt and not display properly to the PSAP or the individual sending the text message. There is no mechanism for the PSAP and the sender to detect or know that their message was delivered to the other successfully.

Some studies indicate that an SMS text-to-911 conversation could last, on average, approximately ten minutes. Taking into consideration the extra delays inherent in text-to-TTY messages, the exchange could last much longer. TTY rides over the same facilities as voice calls and will take away from the PSAP's voice channel capacity when a text-to-911 message is received over TTY. Moreover, with TTY, the call taker can only answer one TTY or voice call at a time.

D. Notification of PSAP Acceptance and Delivery Method

PSAPs will need to notify carriers of their chosen delivery option. However, for the purpose of liability protection and to ensure that the technical and operational details of deployments are managed, PSAPs should make specific, documented requests to carriers for the delivery of text messages rather than using a single notification database approach.[6] This request should be made by all PSAPs and TTY should not be considered a default delivery option. PSAPs successfully interacted directly with wireless carriers when deploying wireless Phases I and II and such one-on-one interaction is necessary for implementation purposes. An intermediary database would impose added costs and fail to provide a valuable function. A single centralized routing gateway is also unnecessary and unadvisable. Text-to-

[6] 47 U.S.C. § 615 provides liability protection to "other emergency communications service providers" which means—

> **(A)** an entity other than a local exchange carrier, wireless carrier, or an IP-enabled voice service provider that is required by the Federal Communications Commission consistent with the Commission's authority under the Communications Act of 1934 to provide other emergency communications services; or
> **(B)** in the absence of a Commission requirement as described in subparagraph (A), an entity that voluntarily elects to provide other emergency communications services and is specifically authorized by the appropriate local or State 9–1–1 service governing authority to provide other emergency communications services.

An "other communications service" is defined as "the provision of emergency information to a [PSAP] via wire or radio communications, and may include 9-1-1 and enhanced 9-1-1 service."

In order to receive the same the liability protection that is currently afforded to wireless and interconnected voice over internet protocol (VoIP) voice call providers, text solutions must be mandated or PSAPs must authorize the service.

911, as NG911, can and should be deployed through a multi-vendor approach. As discussed above, industry standards will ensure effective and efficient interoperability among the various participants.

Respectfully submitted,

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